

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number  
**WO 2005/057243 A1**

(51) International Patent Classification<sup>7</sup>: G01V 9/00, G01B 13/00

(21) International Application Number: PCT/GB2004/005190

(22) International Filing Date: 9 December 2004 (09.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 0328897.4 12 December 2003 (12.12.2003) GB

(71) Applicant (for all designated States except US): **GLAXO GROUP LIMITED** [GB/GB]; Glaxo Wellcome House, Berkeley Avenue, Greenford Middlesex UB6 0NN (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HOLDEN, John, Joseph** [GB/GB]; Aitken Scientific Limited, Oxford House, Oxford Road, Thame Oxfordshire OX9 2AH (GB). **STANLEY, Alan, Leslie** [GB/GB]; GlaxoSmithKline, New Frontiers Science Park South, Third Avenue, Harlow

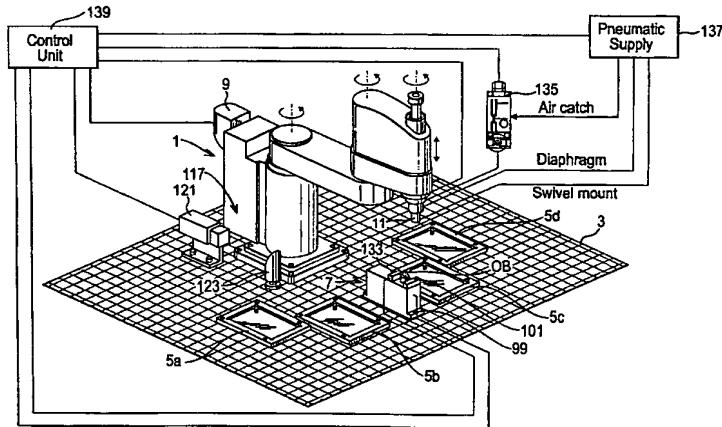
(74) Agent: **WALKER, Ralph, Francis**; GlaxoSmithKline, Corporate Intellectual Property, 980 Great West Road, Brentford Middlesex TW8 9GS (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW).

*[Continued on next page]*

(54) Title: OBJECT DETECTION SYSTEM, METHOD AND TOOL



(57) **Abstract:** One aspect of the invention provides a detection system for determining whether an object (21) is present at a predetermined location, the system comprising a sensor tool (35) including an air outlet (75) at a forward surface thereof from which an air flow is in use delivered; an air catch sensor (135) pneumatically connected to the air outlet (75) of the sensor tool (35) and being operative to detect a change in pressure of the air flow as delivered from the air outlet (75) indicative of the air outlet (75) being moved proximate a surface of an object (21); a positioning mechanism (9) to which the sensor tool (35) is attached; and a control unit (139) for controlling the positioning mechanism (9) to advance the sensor tool (35) such that the air outlet (75) of the sensor tool (35) is advanced through at least one detection point to sense for a surface thereof and determine whether an object (21) is present at a predetermined location. Other aspects of the invention provide use of an air catch sensor unit to determine whether an object (21) is present at a predetermined location and a sensor tool for an air catch sensor (135).

**WO 2005/057243 A1**



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

— *with international search report*